

WHAT IS CLAIMED IS:

1. Apparatus for the removal of lens tissue, said apparatus comprising:

a first handpiece including a laser emitting probe sized for insertion into a lens capsule and radiating a lens therein, said laser emitting probe including a lumen for introducing an irrigation fluid into said lens capsule; and

a second handpiece including a vibrated needle for insertion into said lens capsule and emulsifying lens tissue, said vibrated needle including a lumen therethrough for aspiration of emulsified lens tissue and irrigation fluid;

a power source for providing pulsed electrical power to the second handpiece;

an input for enabling a surgeon to select an amplitude of the electrical pulses;

a control console, interconnected with both the first and second handpress for controlling simultaneous and sequential operation of the first and second handpress and in response to the selected pulse amplitude for controlling a pulse duty cycle of power supplied to the second handpiece, an off duty cycle being controlled to ensure heat dissipation before a subsequent pulse is activated.

2. The apparatus according to claim 1 wherein said control console provides a pulse repetition rate of between about 25 and 2000 pulses per second to said second handpiece.

3. The apparatus according to claim 1 wherein said input enables a linear selection of pulse amplitude.

4. The apparatus according to claim 1 wherein said second handpiece includes a transducer for driving said vibrated needle at ultrasonic frequencies.

5. The apparatus according to claim 1 wherein said laser emitting probe comprises fiber optics.

6. The apparatus according to claim 5 wherein the laser emitting probe lumen is disposed through said fiber optics.

7. A method for removing lens tissue from a lens capsule, said method comprising:

inserting a laser emitting probe having an irrigation lumen into said lens capsule;

inserting a vibratable needle having an aspiration lumen into said lens capsule;

introducing irrigation fluid into said lens capsule through said irrigation lumen;

softening said lens tissue by exposure to laser energy from said laser emitting probe;

vibrating the needle to emulsify softened lens tissue;

providing a power source for providing pulsing electrical power for vibrating the needle;

providing an input for enabling a surgeon to select an amplitude of the selected pulses;

controlling operation of the laser emitting probe and vibratable needle simultaneously and sequentially in order to effect emulsification of the lens tissue;

controlling a pulse duty cycle of said power source in response to the selected pulse amplitude, an off duty cycle being controlled to insure heat dissipation before a subsequent pulse is activated; and

aspirating emulsified lens tissue and irrigation fluid from said lens capsule through said aspiration lumen.

8. A method for removing lens tissue from a lens capsule, said method comprising:

inserting a laser emitting probe having an irrigation lumen into said lens capsule;

inserting a vibratable needle having an aspiration lumen into said lens capsule;

introducing irrigation fluid into said lens capsule through said irrigation lumen;

fracturing said lens tissue by exposure to laser energy from said laser emitting probe;

providing a power source for pulsing electrical power for vibrating the needle;

providing an input for enabling a surgeon to select an amplitude of the electrical pulses;

vibrating the needle to emulsify fractured lens tissue;

controlling the fracturing of said lens tissue and emulsification of fractured lens tissue simultaneously and

sequentially in order to effect emulsification of the lens tissue;

controlling a pulse duty cycle of said power source in response to the selected pulse amplitude, an off duty cycle being controlled to insure that dissipation before a subsequent pulse is activated; and

aspirating emulsified lens tissue and irrigation fluid from said lens capsule through said aspiration lumen.